COMPARISON OF URINE ACETOACETIC ACID AND CAPILLARY BETA HYDROXYBUTYRATE IN DIAGNOSIS AND MANAGEMENT OF DIABETIC KETOACIDOSIS

BACKGROUND

Diabetic ketoacidosis is a medical emergency and early identification helps to decrease mortality due to diabetic ketoacidosis. Hence alternate quicker methods of testing for ketone bodies in the serum will help in determining the treatment protocols of patients with diabetic ketoacidosis. Hence the need for this study.

AIM

1. To detect ketone bodies by the two methods; urine acetoacetic acid and capillary beta hydroxybutyrate to diagnose diabetic ketoacidosis.
2. To compare the two methods in early diagnosis and management of diabetic ketoacidosis.

MATERIALS AND METHODS

The study was conducted at Coinbatore Medical College Hospital,for a period of one year in patients admitted with blood sugar > 250 mgs /dl with suspected Diabetic Ketoacidosis . Beta-hydroxybutyrate levels in capillary blood and acetoacetate in urine will be measured for each patient.

Arterial blood gas analysis will be done to prove ketoacidotic state of the patient. Correlation between the two methods of measurement of ketone bodies and arterial blood gas values was done.

RESULTS

In our study,23%(46 patients) were diagnosed as diabetic ketoacidosis according to ADA criteria. In 18 patients who didnot have ketonuria,capilllary blood ketones was determined to be positive (>0.5 mmol/l) ,2 patients were severely ketonemic found positive for DKA according to ADA criteria ,6 were moderately ketonemic, 10 were mildly ketonemic .

In our study, Sensitivity,specificity,positive and negative predictive value of urine ketone and capillary blood ketone in determining DKA were 91.30% ,80.52% ,50.33% ,96.88% and 100% ,84.03% ,53.49% ,100% respectively

CONCLUSION

Beta-hydroxybutyrate measurement in capillary blood is faster, more effective and a reliable method for the diagnosis of ketoacidosis in the Emergency Department setting than the routinely used urine dipstick method.

KEYWORDS

Diabetic Ketoacidosis, Betahydroxybutyrate,Acetoacetate.